

# Drug related problems in the transition out of ICU

Zhen Xin, Sarah Cameron-Collins, Jessica Geake  
SA Pharmacy, Northern Adelaide Local Health Network

## Introduction

Patients are at high-risk of medication errors during transitions of care, with over 50% of medication errors occurring during this time, and up to one third having the potential to cause harm. Patients transferred out of an Intensive Care Unit (ICU) are particularly vulnerable to drug related problems due to fluctuating pharmacokinetics, use of high-risk medications and complexity of route of administration.

## Aims

To investigate the rate, classification, outcomes and severity of drug related problems (DRPs) on transition out from ICU.

## Method

**Population:** Patients discharged from Intensive Care Unit to an inpatient ward between July 2022 and August 2022, with detailed clinical review by the attending ICU pharmacist

**Setting:** Lyell McEwin Hospital, Northern Adelaide Local Health Network.

## Results

In total, **58 patients** discharged from ICU were eligible during the data collection period:

- **90%** had **at least one** drug related problem.
- **27%** of DRPs were related to high-risk medication based on APINCHEN classification. Of these 51 DRPs, **41%** were related to anti-infectives, while **30%** were related to anti-coagulants.
- **98%** of pharmacist recommendations were either accepted by the prescriber or had an unknown outcome at the time of data collection.

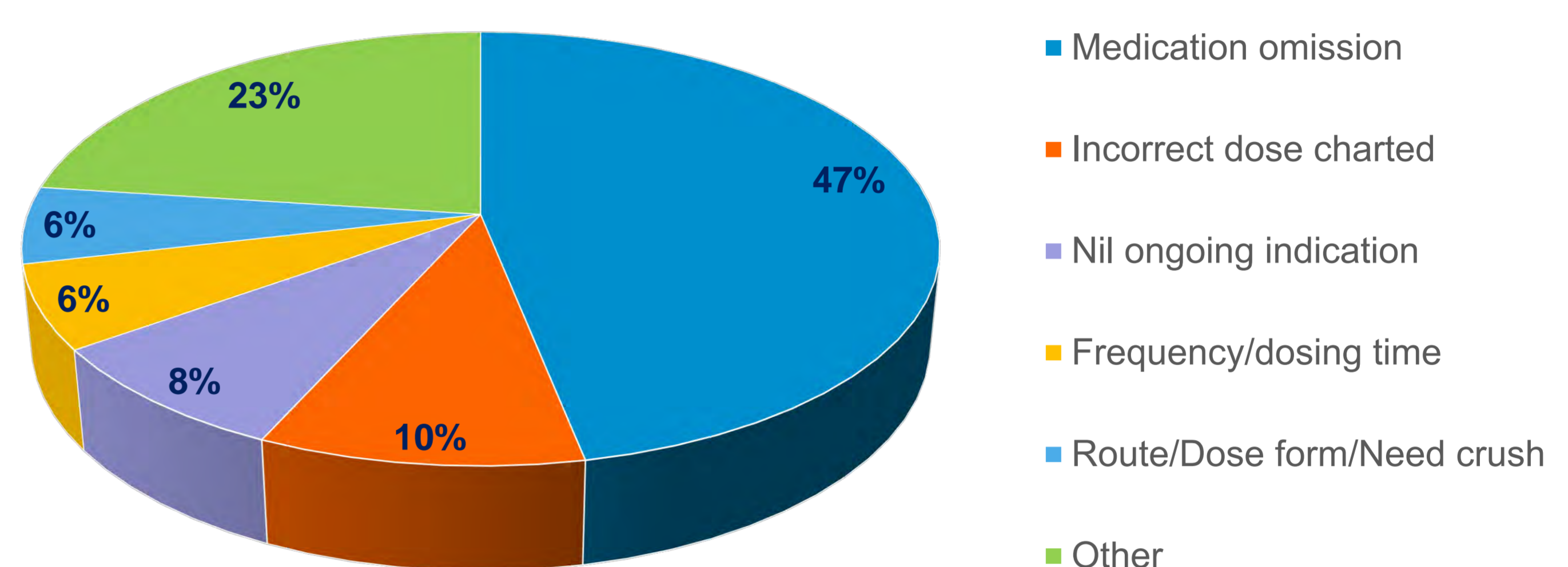


Figure 1: Classification of Drug related problems during transition out from ICU

- Only **9%** of DRPs were moderate severity, while all the remaining were considered minor.

Medication class	Number of DRPs	DRPs Description
Anticoagulants	3	Blood thinner charted with contraindication (High risk of bleeding)
Steroids	2	Sudden cessation of steroids after using Dexamethasone in patients on long-term prednisolone.
Risperidone	1	Usual dosing time at night, charted for morning, caused agitation overnight.
Anti-diabetic medications	2	Metformin/insulin charted while planned to be held (severe renal impairment/ reduced BGL with poor intake).

Table 1: Examples of DRPs with moderate severity

## Conclusion

- DRPs are very common for patients transitioning out of ICU.
- Most DRPs are of low severity, more severe DRPs occurred in almost 10% of discharges.
- DRPs related to high-risk medications in almost one third of cases.
- Patients are at high risk of DRPs at the time of ICU discharge, therefore, dedicated and adequately staffed clinical pharmacy service is important to reduce the risk of medication errors during transition out from ICU.

## References

- Tully, Andrea P. PharmD; Hammond, Drayton A. PharmD, MBA; Li, Chenghui PhD; Jarrell, Andrew S. PharmD; Krueger, Rachel M. PharmD. Evaluation of Medication Errors at the Transition of Care from an ICU to Non-ICU Location. *Critical Care Medicine*: April 2019 - Volume 47 - Issue 4 - p 543-549
- Krueger RM, Jarrell AS, Latif A. Reducing medication errors in critical care: A multimodal approach. *Clin Pharmacol* 2014; 6:117-126
- The Society of Hospital Pharmacists of Australia (SHPA). *Standards of Practice for Clinical Pharmacy Services, Chapter 13: Documenting Clinical Activities. Journal of Pharmacy Practice and Research* Volume 43, No. 2 (suppl), 2013

For more information

Zhen Xin  
Intern Pharmacist  
SA Pharmacy – Northern Adelaide Local Health Network  
Zhen.xin@sa.gov.au



Government of South Australia  
SA Health  
SA Pharmacy